=> d l3 ibib abs 1-7

L3 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:259447 CAPLUS
DOCUMENT NUMBER: 142:319862
TITLE: Hydrogen diffusion electrode for protonic ceramic fuel cell
INVENTOR(S): Coors, W. Grover
PATENT ASSIGNEE(S): Protonetics International, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005064259	A1	20050324	US 2004-923500	20040820
WO 2005036672	A2	20050421	WO 2004-US27789	20040825

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-505894P P 20030924
US 2004-923500 A 20040820

AB A proton conducting fuel cell includes an electrolyte having a proton conducting ceramic electrolyte and a two-phase diffusion membrane electrode contacting the electrolyte, where the electrode is substantially non-porous and permeable to hydrogen. Also, a method of generating mol. hydrogen from a proton conducting fuel cell having a pos. and neg. electrode in contact with a proton conducting ceramic electrolyte, including selectively extracting pure hydrogen from a hydrogen gas mixture, and electrolyzing water vapor at a pos. electrode of the fuel cell to form mol. oxygen and hydrogen ions, and reducing the hydrogen ions at a neg. electrode of the fuel cell to form mol. hydrogen.

L3 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:857013 CAPLUS
DOCUMENT NUMBER: 141:352729
TITLE: Coproduction of hydrogen and electricity in a high temperature electrochemical system
INVENTOR(S): Sridhar, K. r.; McElroy, James F.; Finn, John E.; Mitlitsky, Fred; Gottmann, Matthias
PATENT ASSIGNEE(S): Ion America Corporation, USA
SOURCE: U.S. Pat. Appl. Publ., 27 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004202914	A1	20041014	US 2003-446704	20030529
WO 2004093214	A2	20041028	WO 2004-US10818	20040407
WO 2004093214	A3	20050106		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,

NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,
BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,
TD, TG

EP 1620906	A2	20060201	EP 2004-759269		20040407
US 2004224193	A1	20041111	US 2004-866238		20040614
PRIORITY APPLN. INFO.:			US 2003-461190P	P	20030409
			US 2003-446704	A	20030529
			US 2003-653240	A2	20030903
			WO 2004-US10818	W	20040407

EP 1620906 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK

AB A high temperature electrochem. system, such as a **solid oxide fuel cell** system, generates hydrogen and optionally electricity in a fuel cell mode. At least a part of the generated hydrogen is separated and stored or provided to a hydrogen using device. A **solid oxide** regenerative **fuel cell** system stores carbon dioxide in a fuel cell mode. The system generates a methane fuel in an **electrolysis** mode from the stored carbon dioxide and water by using a Sabatier subsystem. Alternatively, the system generates a hydrogen fuel in an **electrolysis** mode from water alone.

L3 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER:	2004:802376 CAPLUS
DOCUMENT NUMBER:	141:280424
TITLE:	**Solid oxide fuel cell** power and oxygen generation method and system
INVENTOR(S):	Gottmann, Matthias; McElroy, James Frederick; Mitlitsky, Fred; Sridhar, K. R.
PATENT ASSIGNEE(S):	Ion America Corporation, USA
SOURCE:	U.S. Pat. Appl. Publ., 16 pp. CODEN: USXXCO
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004191598	A1	20040930	US 2003-394202	20030324
US 2004191595	A1	20040930	US 2003-465636	20030620
WO 2004086537	A2	20041007	WO 2004-US8742	20040323
WO 2004086537	A3	20050210		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

WO 2004086585	A2	20041007	WO 2004-US8745	20040323
WO 2004086585	A3	20041209		

W: AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ, MZ, NA

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-394202 A2 20030324
US 2003-465636 A 20030620

AB A **solid oxide** regenerative **fuel cell** system is used to supply power in a fuel cell mode and to generate metabolic oxygen and a hydrocarbon fuel reserve in an **electrolysis** mode. The system may also be used as a secondary power source or for energy peak shaving applications.

L3 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:802374 CAPLUS
DOCUMENT NUMBER: 141:280422
TITLE: **Solid oxide** regenerative **fuel cell** system and method with an exothermic net **electrolysis** reaction
INVENTOR(S): Mcelroy, James Frederick; Finn, John E.
PATENT ASSIGNEE(S): Ion America Corporation, USA
SOURCE: U.S. Pat. Appl. Publ., 15 pp., Cont.-in-part of U.S. Ser. No. 394,202.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004191595	A1	20040930	US 2003-465636	20030620
US 2004191598	A1	20040930	US 2003-394202	20030324
WO 2004086585	A2	20041007	WO 2004-US8745	20040323
WO 2004086585	A3	20041209		

W: AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ, MZ, NA

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-394202 A2 20030324
US 2003-465636 A 20030620

AB A **solid oxide** regenerative **fuel cell** system is used to supply power in a fuel cell mode and to generate a hydrocarbon fuel in an **electrolysis** mode. The system includes a **solid oxide** regenerative **fuel cell** and a reactor adapted to convert an exhaust emitted from the **solid oxide** regenerative **fuel cell** to a hydrocarbon gas when the **solid oxide** regenerative **fuel cell** operates in an **electrolysis** mode.

L3 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:354666 CAPLUS
DOCUMENT NUMBER: 140:360334
TITLE: **Solid oxide** regenerative **fuel cell**
INVENTOR(S): Mcelroy, James; Gottmann, Matthias; Finn, John; Mitlitsky, Fred
PATENT ASSIGNEE(S): Ion America, USA

SOURCE: U.S. Pat. Appl. Publ., 26 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004081859	A1	20040429	US 2003-635446	20030807
US 6821663	B2	20041123		
WO 2004038885	A2	20040506	WO 2003-US29127	20031015
WO 2004038885	A3	20040715		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2002-420259P P 20021023
US 2003-635446 A 20030807

AB A **solid oxide** regenerative **fuel cell** system stores waste heat from the fuel cell in a heat storage material during the discharge mode. The heat is then used to heat water to be electrolyzed during the charge mode.

REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:504918 CAPLUS
DOCUMENT NUMBER: 139:56985
TITLE: Enhancement of the OSC properties of Ce-Zr based solid solutions
INVENTOR(S): Nunan, John Gerard; Bortun, Anatoly I.
PATENT ASSIGNEE(S): Delphi Technologies, Inc., USA
SOURCE: U.S., 24 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6585944	B1	20030701	US 2000-690208	20001017

PRIORITY APPLN. INFO.: US 2000-690208 20001017

AB The present invention relates to high oxygen ion conducting/oxygen storage (OIC/OS) capacity materials, a catalyst employing the OIC/OS materials, and a method for converting hydrocarbons, **carbon monoxide** and nitrogen oxides using the catalyst. The OIC/OS materials have stable cubic crystalline structures such that after aging for greater than about 36 h at temps. up to about 1,200 °C, greater than about 60-95% of the cerium present is reducible. These materials comprise up to about 95 mol percent (mol %) zirconium, up to about 50 mol % cerium, up to about 20 mol % of a stabilizer such as yttrium, rare earth elements, and the like; and about 0.01 to about 25 mol % of a base metal selected from the group consisting of iron, copper, cobalt, nickel, silver, manganese, bismuth and mixts. comprising at least one of the foregoing metals. Due to the enhanced phase stability and oxygen ion conducting properties of these OIC/OS materials, they can be employed in numerous applications, including: in **solid oxide fuel cells** (SOFC) for energy conversion, in electrochem. oxygen sensors, in oxygen ion pumps, structural ceramics of high toughness, in heating elements, in electrochem. reactors, in steam

electrolysis cells, in electrochromic materials, in MHD (MHD) generators, in hydrogen sensors, in catalysts for methanol decomposition, as potential hosts for immobilizing nuclear waste, as oxygen storage materials in three-way-conversion (TWC) catalysts, as well as in other applications where oxygen storage capacity and/or oxygen ion conductivity are factors.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:367160 CAPLUS
DOCUMENT NUMBER: 136:373805
TITLE: Preparation of multi-component Ce, Zr, MOx high oxygen-ion-conduct/oxygen-storage-capacity materials
INVENTOR(S): Anatoly, Bortun I.; Nunan, John Gerard
PATENT ASSIGNEE(S): Delphi Technologies, Inc., USA
SOURCE: U.S., 24 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6387338	B1	20020514	US 2000-525879	20000315
PRIORITY APPLN. INFO.:			US 2000-525879	20000315

AB The present invention relates to high oxygen ion conducting/oxygen storage capacity (OIC/OS) materials, a catalyst employing the OIC/OS materials, and a method for converting nitrogen oxides using the catalyst. The OIC/OS materials have stable cubic crystalline structures under oxidizing conditions (in air) up to about 1200° C. and in reducing conditions (5% hydrogen) up to about 1000° C. for 24 h. These materials comprise up to about 95 mol percent (mole %) zirconium, up to about 50 mol % cerium and up to about 10 mol % yttrium, and optionally up to about 15 mol % of Y plus another rare earth or alkaline earth metal. Due to the enhanced phase stability and oxygen ion conducting properties of these OIC/OS materials, it can be employed in numerous applications, including: in **solid oxide fuel cells** (SOFC) for energy conversion, in electrochem. oxygen sensors, in oxygen ion pumps, structural ceramics of high toughness, in heating elements, in electrochem. reactors, in steam **electrolysis** cells, in electrochromic materials, in MHD (MHD) generators, in hydrogen sensors, in catalysts for methanol decomposition, as potential hosts for immobilizing nuclear waste, as oxygen storage materials in three-way-conversion (TWC) catalysts, as well as in other applications where oxygen storage capacity and/or oxygen ion conductivity are factors.

REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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(FILE 'HOME' ENTERED AT 15:53:29 ON 08 MAR 2006)

FILE 'CAPLUS' ENTERED AT 15:53:37 ON 08 MAR 2006

L1 6570 S SOLID OXIDE (2A) (FUEL CELL)
L2 67 S L1 AND ELECTROLYSIS
L3 7 S L2 AND (CARBON MONOXIDE)
L4 2 S L3 AND (NI OR CU OR FE OR NICKEL OR COPPER OR IRON)

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